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Docket No.: 5000-0124PUS1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Volker MAYWALD et al.

Application No.: Not Yet Assigned

Confirmation No.: N/A

Filed: May 20, 2005

Art Unit: N/A

For: PREPARATION OF BENZOPHENONES

Examiner: Not Yet Assigned

LETTER

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The PTO is requested to use the amended sheets/claims attached hereto (which correspond to Article 19 amendments or to claims attached to the International Preliminary Examination Report (Article 34)) during prosecution of the above-identified national phase PCT application.

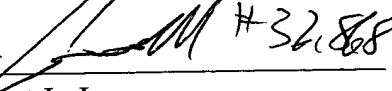
If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §1.16 or 1.14; particularly, extension of time fees.

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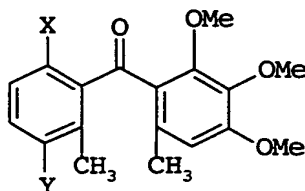
Respectfully submitted,

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Attachment(s)

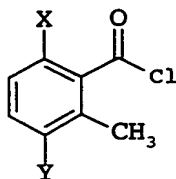
We claim:

1. A process for preparing benzophenones of the formula I,



I

where X may be chlorine, hydroxyl, methoxy or C₁-C₆-alkylcarbonyloxy, and Y may be chlorine or bromine, by reacting an acid chloride of the formula II



II

where X and Y are as defined above with 3,4,5-trimethoxytoluene, which comprises carrying out the reaction in the presence of

- a) an aromatic hydrocarbon as a diluent and
 - b) from 0.01 to 0.2 mol% of an iron catalyst, based on the acid chloride,
 - c) at a temperature between 60°C and the boiling point of the particular diluent.
2. A process as claimed in claim 1, wherein the diluent used is chlorobenzene.
3. A process as claimed in claim 1 or 2, wherein 3,4,5-trimethoxytoluene is initially charged, optionally in the particular diluent, and the acid chloride together with the iron catalyst is metered in, optionally in the particular diluent.
4. A process as claimed in any of claims 1 to 3, wherein the hydrochloric acid forming in the reaction is removed from the reaction mixture by stripping using an inert gas stream.

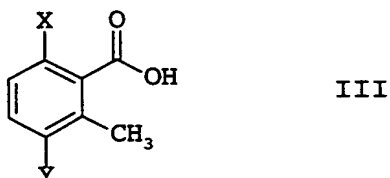
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5. A process as claimed in any of claims 1 to 4, wherein the diluent is distilled off toward the end or during the course of the reaction, and the remaining product melt is crystallized in a C₁-C₆-alcohol.

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6. A process as claimed in any of claims 1 to 5, wherein the acid chloride of the formula II is prepared by reacting an acid of the formula III

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where X and Y are each as defined above with thionyl chloride or phosgene, optionally in the presence of dimethylformamide, in the same diluent which is also used in the subsequent Friedel-Crafts stage.

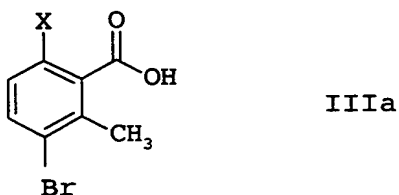
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7. A process as claimed in claim 6, wherein, after formation of the acid chloride II, at least a portion of the diluent is distilled off with excess thionyl chloride and recycled into the process.

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8. A process as claimed in claim 6, wherein the acid of the formula IIIa

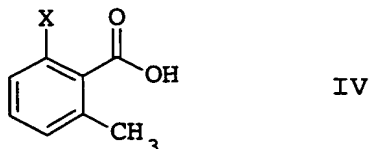
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is prepared by brominating the compound IV

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with elemental bromine in the same diluent which is also used in the two subsequent stages.

- 45 9. A process as claimed in claim 8, wherein at least a portion of the diluent and excess bromine is distilled off at the end of the bromination and recycled into the process.